Eplerenone versus placebo for chronic central serous chorioretinopathy: the VICI RCT

Andrew Lotery,^{1*} Sobha Sivaprasad,² Abby O'Connell,³ Rosie A Harris,³ Lucy Culliford,³ Angela Cree,¹ Savita Madhusudhan,⁴ Helen Griffiths,¹ Lucy Ellis,³ Usha Chakravarthy,⁵ Tunde Peto,⁵ Chris A Rogers³ and Barnaby C Reeves³

- ²NIHR Moorfields Biomedical Research Centre, Moorfields Eye Hospital NHS Foundation Trust, London, UK
- ³Bristol Trials Centre Clinical Trials and Evaluation Unit (BTC-CTEU), Bristol Royal Infirmary, University of Bristol, Bristol, UK
- ⁴Liverpool Ophthalmic Reading Centre, St. Paul's Eye Unit, Royal Liverpool University Hospitals NHS Trust, Liverpool, UK
- ⁵Centre for Vision Sciences, Queen's University Belfast, Belfast, UK

Declared competing interests of authors: Andrew Lotery reports personal fees from Novartis International AG (Basel, Switzerland), a travel grant from Bayer AG (Leverkusen, Germany), personal fees from Roche Holding AG (Basel, Switzerland), personal fees and a travel grant from Allergan plc (Dublin, Ireland), personal fees from Gyroscope Therapeutics Limited (London, UK) and personal fees from Boehringer Ingelheim (Ingelheim am Rhein, Germany) outside the submitted work. Sobha Sivaprasad reports grants, personal fees and non-financial support from Bayer AG; grants, personal fees and non-financial support from Novartis International AG; grants, personal fees and non-financial support from Optos, Inc. (Marlborough, MA, USA); personal fees from Heidelberg Engineering Ltd (Hemel Hempstead, UK); grants and personal fees from Boehringer Ingleheim; personal fees from Oxurion (Leuven, Belgium); personal fees from Roche Holding AG; and grants from Allergan plc outside the submitted work. Sobha Sivaprasad is a member of the National Institute for Health Research (NIHR) Health Technology Assessment (HTA) Commissioning Committee (2017 to present). Angela Cree reports grants from the University of Southampton during the conduct of the study. Usha Chakravarthy reports prior membership of the NIHR HTA IP Panel (until 2012) and the NIHR HTA Prioritisation Committee (until 2017). Tunde Peto reports personal fees from Novartis International AG, personal fees from Bayer AG, personal fees from Roche Holding AG, speaker fees paid to her institution from Optos, Inc., personal fees from Heidelberg Engineering Ltd, consultancy fees paid to her institution from Welch Allyn (Skaneateles Falls, NY, USA) and personal fees from Boehringer Ingleheim outside the submitted work. Chris A Rogers is a member of clinical trial units (CTUs) funded by the NIHR (2013 to present), the NIHR HTA funding Committee Policy Group (2017 to present) and the HTA Commissioning Committee (2016 to present). Barnaby Reeves is a member of CTUs funded by the NIHR (2013 to present), the Systematic Reviews Programme Cochrane Programme Grant Funding Meeting, Systematic Reviews Programme Advisory Group and the NIHR HTA Prioritisation Committee B Methods Group (2019 to present).

¹Department of Clinical and Experimental Sciences, Faculty of Medicine, University of Southampton, Southampton, UK

^{*}Corresponding author a.j.lotery@soton.ac.uk

Published January 2021 DOI: 10.3310/eme08020

Plain English summary

The VICI RCT

Efficacy and Mechanism Evaluation 2021; Vol. 8: No. 2

DOI: 10.3310/eme08020

NIHR Journals Library www.journalslibrary.nihr.ac.uk

Plain English summary

Background and study aims

Central serous chorioretinopathy is a poorly understood eye condition where fluid builds up at the back of the eye. When fluid is present for longer than 3 months this is known as chronic central serous chorioretinopathy. Around one-third of patients with chronic central serous chorioretinopathy can have permanent vision loss. The exact cause of central serous chorioretinopathy is unknown and currently there are no proven effective treatments. Recently, a drug called eplerenone has shown some benefit for treating central serous chorioretinopathy; however, information on the long-term benefit of this drug is lacking.

The aim of this study was to test the effectiveness of eplerenone for the treatment of central serous chorioretinopathy. The main assessment we used to measure whether or not eplerenone improved vision was a vision test on a letter chart (like a vision test used at an opticians).

Who participated?

A total of 114 adults with visual impairment due to central serous chorioretinopathy from 22 NHS hospitals took part.

What did the study involve?

Participants were randomly allocated to treatment with either eplerenone or a placebo (an identical capsule to eplerenone but containing no active ingredients). Participants attended hospital visits over 12 months, undergoing vision tests and an eye examination, having blood tests and completing questionnaires about their sight. Participants were closely monitored for any side effects of eplerenone.

What did the study find?

Eplerenone was no better than placebo at improving vision in people with central serous chorioretinopathy during the 12-month study. This was the largest study of its kind and the findings are important. The future use of eplerenone for treating central serous chorioretinopathy requires review.

Efficacy and Mechanism Evaluation

ISSN 2050-4365 (Print)

ISSN 2050-4373 (Online)

This journal is a member of and subscribes to the principles of the Committee on Publication Ethics (COPE) (www.publicationethics.org/).

Editorial contact: journals.library@nihr.ac.uk

The full EME archive is freely available to view online at www.journalslibrary.nihr.ac.uk/eme. Print-on-demand copies can be purchased from the report pages of the NIHR Journals Library website: www.journalslibrary.nihr.ac.uk

Criteria for inclusion in the Efficacy and Mechanism Evaluation journal

Reports are published in *Efficacy and Mechanism Evaluation* (EME) if (1) they have resulted from work for the EME programme, and (2) they are of a sufficiently high scientific quality as assessed by the reviewers and editors.

EME programme

The Efficacy and Mechanism Evaluation (EME) programme funds ambitious studies evaluating interventions that have the potential to make a step-change in the promotion of health, treatment of disease and improvement of rehabilitation or long-term care. Within these studies, EME supports research to improve the understanding of the mechanisms of both diseases and treatments.

The programme supports translational research into a wide range of new or repurposed interventions. These may include diagnostic or prognostic tests and decision-making tools, therapeutics or psychological treatments, medical devices, and public health initiatives delivered in the NHS.

The EME programme supports clinical trials and studies with other robust designs, which test the efficacy of interventions, and which may use clinical or well-validated surrogate outcomes. It only supports studies in man and where there is adequate proof of concept. The programme encourages hypothesis-driven mechanistic studies, integrated within the efficacy study, that explore the mechanisms of action of the intervention or the disease, the cause of differing responses, or improve the understanding of adverse effects. It funds similar mechanistic studies linked to studies funded by any NIHR programme.

The EME programme is funded by the Medical Research Council (MRC) and the National Institute for Health Research (NIHR), with contributions from the Chief Scientist Office (CSO) in Scotland and National Institute for Social Care and Health Research (NISCHR) in Wales and the Health and Social Care Research and Development (HSC R&D), Public Health Agency in Northern Ireland.

This report

The research reported in this issue of the journal was funded by the EME programme as project number 13/94/15. The contractual start date was in April 2016. The final report began editorial review in December 2019 and was accepted for publication in June 2020. The authors have been wholly responsible for all data collection, analysis and interpretation, and for writing up their work. The EME editors and production house have tried to ensure the accuracy of the authors' report and would like to thank the reviewers for their constructive comments on the final report document. However, they do not accept liability for damages or losses arising from material published in this report.

This report presents independent research. The views and opinions expressed by authors in this publication are those of the authors and do not necessarily reflect those of the NHS, the NIHR, the MRC, NETSCC, the EME programme or the Department of Health and Social Care. If there are verbatim quotations included in this publication the views and opinions expressed by the interviewees are those of the interviewees and do not necessarily reflect those of the authors, those of the NHS, the NIHR, NETSCC, the EME programme or the Department of Health and Social Care.

© Queen's Printer and Controller of HMSO 2021. This work was produced by Lotery et al. under the terms of a commissioning contract issued by the Secretary of State for Health and Social Care. This issue may be freely reproduced for the purposes of private research and study and extracts (or indeed, the full report) may be included in professional journals provided that suitable acknowledgement is made and the reproduction is not associated with any form of advertising. Applications for commercial reproduction should be addressed to: NIHR Journals Library, National Institute for Health Research, Evaluation, Trials and Studies Coordinating Centre, Alpha House, University of Southampton Science Park, Southampton SO16 7NS, UK.

Published by the NIHR Journals Library (www.journalslibrary.nihr.ac.uk), produced by Prepress Projects Ltd, Perth, Scotland (www.prepress-projects.co.uk).

NIHR Journals Library Editor-in-Chief

Professor Ken Stein Professor of Public Health, University of Exeter Medical School, UK

NIHR Journals Library Editors

Professor John Powell Chair of HTA and EME Editorial Board and Editor-in-Chief of HTA and EME journals. Consultant Clinical Adviser, National Institute for Health and Care Excellence (NICE), UK, and Professor of Digital Health Care, Nuffield Department of Primary Care Health Sciences, University of Oxford, UK

Professor Andrée Le May Chair of NIHR Journals Library Editorial Group (HS&DR, PGfAR, PHR journals) and Editor-in-Chief of HS&DR, PGfAR, PHR journals

Professor Matthias Beck Professor of Management, Cork University Business School, Department of Management and Marketing, University College Cork, Ireland

Dr Tessa Crilly Director, Crystal Blue Consulting Ltd, UK

Dr Eugenia Cronin Senior Scientific Advisor, Wessex Institute, UK

Dr Peter Davidson Consultant Advisor, Wessex Institute, University of Southampton, UK

Ms Tara Lamont Senior Scientific Adviser (Evidence Use), Wessex Institute, University of Southampton, UK

Dr Catriona McDaid Senior Research Fellow, York Trials Unit, Department of Health Sciences, University of York, UK

Professor William McGuire Professor of Child Health, Hull York Medical School, University of York, UK

Professor Geoffrey Meads Emeritus Professor of Wellbeing Research, University of Winchester, UK

Professor James Raftery Professor of Health Technology Assessment, Wessex Institute, Faculty of Medicine, University of Southampton, UK

Dr Rob Riemsma Reviews Manager, Kleijnen Systematic Reviews Ltd, UK

Professor Helen Roberts Professor of Child Health Research, UCL Great Ormond Street Institute of Child Health, UK

Professor Jonathan Ross Professor of Sexual Health and HIV, University Hospital Birmingham, UK

Professor Helen Snooks Professor of Health Services Research, Institute of Life Science, College of Medicine, Swansea University, UK

Professor Ken Stein Professor of Public Health, University of Exeter Medical School, UK

Professor Jim Thornton Professor of Obstetrics and Gynaecology, Faculty of Medicine and Health Sciences, University of Nottingham, UK

Please visit the website for a list of editors: www.journalslibrary.nihr.ac.uk/about/editors

Editorial contact: journals.library@nihr.ac.uk